



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,983	04/17/2006	Matthew Glen Wheeler	35010148US	8458
32827	7590	08/14/2007	EXAMINER	
THE OLLILA LAW GROUP LLC			NGHIEM, MICHAEL P	
2060 BROADWAY			ART UNIT	PAPER NUMBER
SUITE 300			2863	
BOULDER, CO 80302				
			MAIL DATE	DELIVERY MODE
			08/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/575,983	WHEELER ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Michael P. Nghiem	2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-33 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_ is/are allowed.  
 6) Claim(s) 1-33 is/are rejected.  
 7) Claim(s) \_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 17 April 2006 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
     1. Certified copies of the priority documents have been received.  
     2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
     3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>4-17-06</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|  | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Specification***

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

"Comprises" (line 6) is an improper legal phraseology.

### ***Drawings***

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

Art Unit: 2863

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the various means (claims 17-31) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

Claims 8, 24, and 30 are objected to because of the following informalities:

- claims 8, 24, "multi-sign" (line 4) should be – multi-sine --.
- claim 30, "claim 25" (line 1) should be – claim 26 --.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 9, 11-13, 17-21, 25, 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Patten et al. (US 6,092,409).

NOTE: Claim 30 is interpreted as dependent from claim 26.

Regarding claims 1 and 17, Patten et al. discloses a method and system for validating a flow calibration factor of a flow meter (Abstract, lines 1-2), comprising:

Art Unit: 2863

- determining an initial flexural stiffness (oscillation period, 901) of a component of said flow meter (via 901);
  - determining a current flexural stiffness of said component (via 403);
  - comparing said initial flexural stiffness to said current flexural stiffness (step 902);
    - detecting a calibration error condition responsive to comparing said initial flexural stiffness to said current flexural stiffness (column 5, lines 9-12).

Regarding claims 2 and 18, Patten et al. discloses signaling said calibration error condition (step 904).

Regarding claims 3 and 19, Patten et al. discloses correcting said flow calibration factor responsive to said calibration error condition being detected (column 10, lines 28-30).

Regarding claims 4 and 20, Patten et al. discloses said flexural stiffnesses are determined by solving a single degree of freedom model (measurement of oscillation, column 1, lines 34-35, using sensors, column 1, lines 42-46).

Regarding claims 5 and 21, Patten et al. discloses said single degree of freedom model is solved using a method comprising the steps of: applying a known force to said flow meter component (column 1, lines 34-35); measuring a resultant deflection of said flow meter component (sensors measure motion, column 1, lines 42-44); and determining

said flexural stiffnesses (oscillation period) responsive to said force and deflection (column 2, lines 33-35).

Regarding claims 9 and 25, Patten et al. discloses said flexural stiffnesses are determined by solving a multiple degree of freedom model (determine period of oscillation based on flow calibration factor and density, column 2, lines 58-62).

Regarding claims 11 and 27, Patten et al. discloses said calibration error is corrected using coefficient estimation techniques (column 9, lines 37-41).

Regarding claims 12 and 28, Patten et al. discloses said calibration error is corrected using multi-fluid calibration techniques (column 10, lines 28-30; Fig. 3).

Regarding claims 13 and 29, Patten et al. discloses said calibration error is corrected using trending techniques (using proportion of change, column 10, lines 28-30).

#### ***Allowable Subject Matter***

Claims 6-8, 10, 14-16, 22-24, 26, 30-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Reasons For Allowance***

The combination as claimed wherein said single degree of freedom model is solved using a method comprising the steps of: determining a receptance transfer function; calculating an inverse receptance frequency response; and determining said flexural stiffnesses responsive to said frequency response (claims 6, 22) or said single degree of freedom model is solved using a method comprising the steps of: identifying constants; applying a transfer function model to a complex frequency response; converting said transfer function from a mobility form to a response form; extracting modal parameters from said transfer function; and calculating flexural stiffnesses responsive to said modal parameters (claims 7, 23) or generating a response model of said flow meter structure; converting said response model to a modal model; converting said modal model into a spatial model; and determining said flexural stiffness from said spatial model (claims 10, 26) is not disclosed, suggested, or made obvious by the prior art of record.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Nghiem whose telephone number is (571) 272-2277. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MICHAEL NGHIEM  
PRIMARY EXAMINER

Michael Nghiem

August 8, 2007